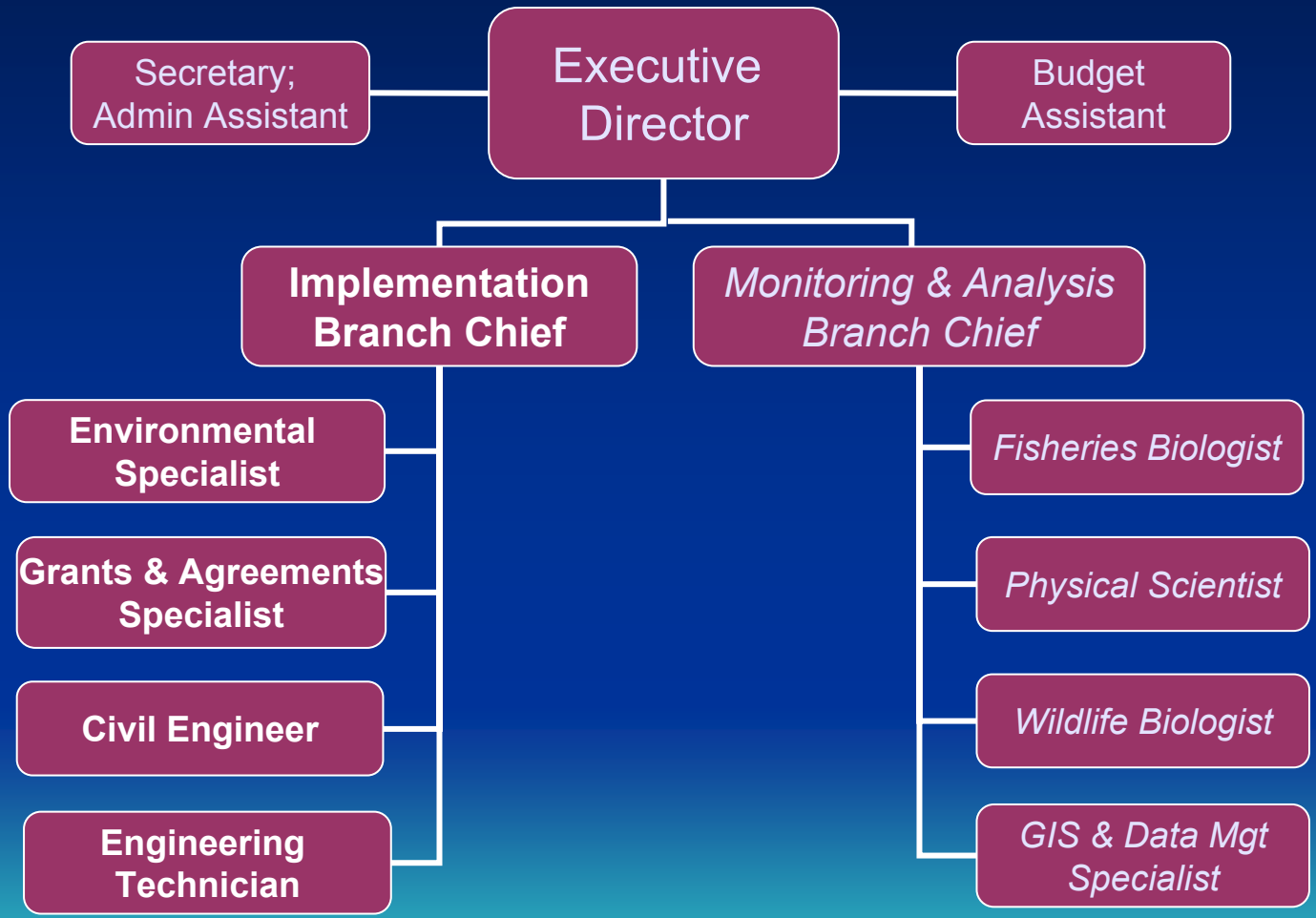

Trinity River Restoration Program
Rehabilitation Implementation Group
Trinity River Restoration Program
Restore • Adapt • Improve

Presentation objectives:

- Understand the roles and responsibilities of the Rehabilitation Implementation Group (RIG).
- Know who the staff are.
- Review our annual workplan objectives.
- Discuss ways the TAMWG can contribute constructively to RIG projects and priorities.

AEAM Science



RIG Role

The RIG is responsible for implementing the on-the-ground design and construction activities associated with the restoration program. These include:

1) Design data collection
2) Exploratory drilling and materials testing
3) ROW acquisition
4) NEPA/CEQA compliance and permits
5) Engineering designs
6) Awarding construction contracts
7) Administering construction
8) Public involvement

RIG Staffing:

Ed Solbos, Branch Chief

Brandt Gutermuth, Environmental Specialist

Rich Miller, Civil Engineer

Noelyn Habana, Civil Engineering Technician

Vacant, Grants and Agreements

FY2003 Annual Workplan Objectives

- All bridges and floodplain structures will be able to pass “extremely wet year” ROD flows (11,000 cubic feet per second) by May 2004.
  - Budget constraints will limit construction to 2 bridges in FY03
  - Ortho-rectified aerial photographs required for flood plain analysis will be available by April 2003. Trinity County providing contracting support.
- The first group of channel restoration projects will be ready for implementation by the end of FY03.
  - Design of the first 16 sites is being pursued by the DWR, Hoopa Tribe, and TRRP Office.
  - Emphasis on below Canyon Creek as a prototype
  - Rush Creek delta
- Short & long term gravel augmentation in concert with the gravel management plan
  - Cable way site
  - Weir site

Trinity River Mainstem Restoration

Salt Flat Bridge Project

Historic River Conditions

- Prior to the dams, high flows were relatively common
- Peak flows at Lewiston have exceeded 100,000 cfs
- 40,000 cfs about every 10 years


Trinity Dam

The Flow Regime under the ROD

Water Year Class	Peak Flow (cfs)	Peak Flow Duration (Days)
Critically Dry	1,500	36
Dry	4,500	5
Normal	6,000	5
Wet	8,500	5
Extremely Wet	11,000	5

Requirement

"...Reclamation will take appropriate steps in a timely manner to ensure that affected bridges, houses and outbuildings are structurally improved or relocated or otherwise addressed before implementing peak releases..."

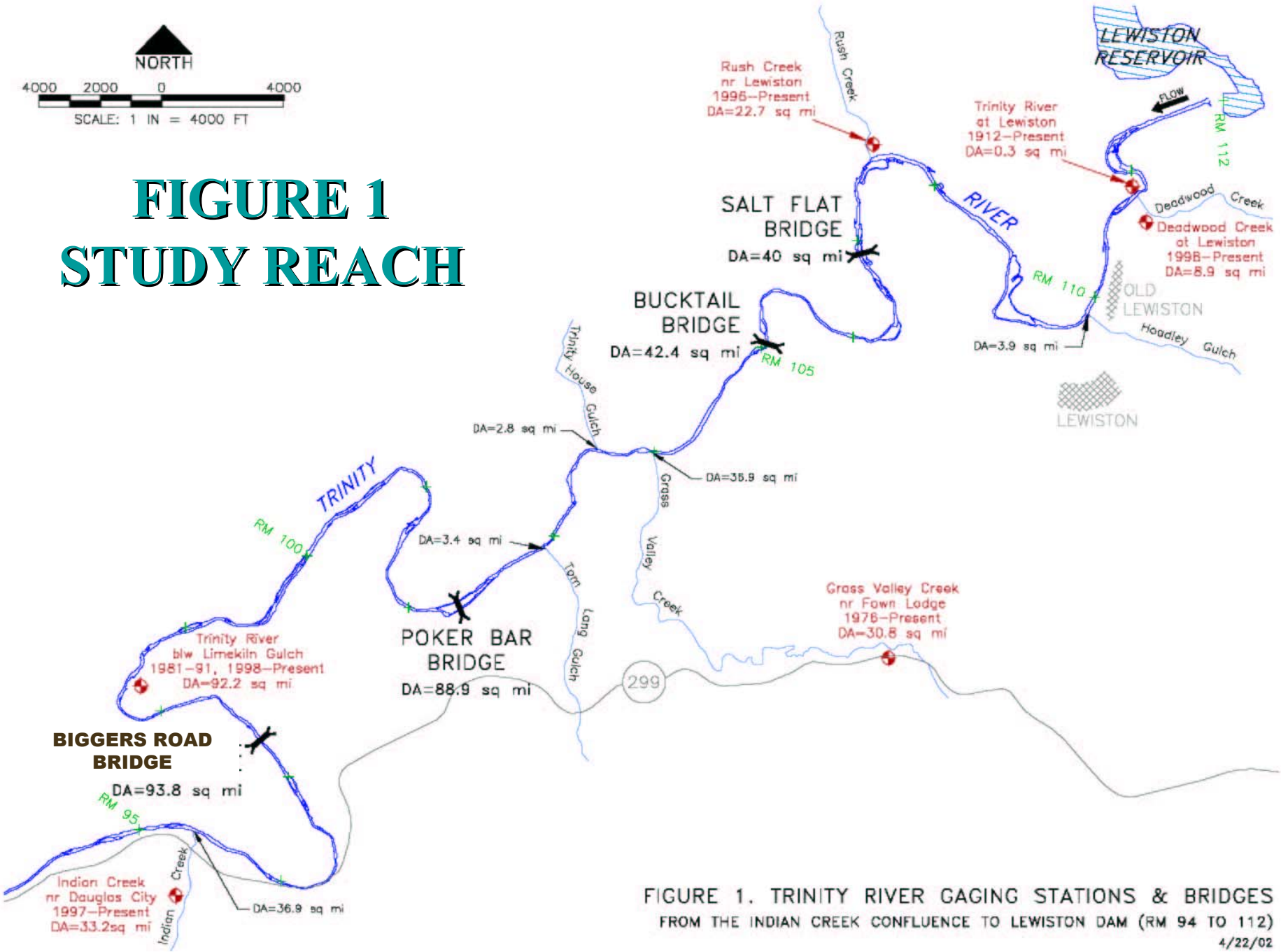
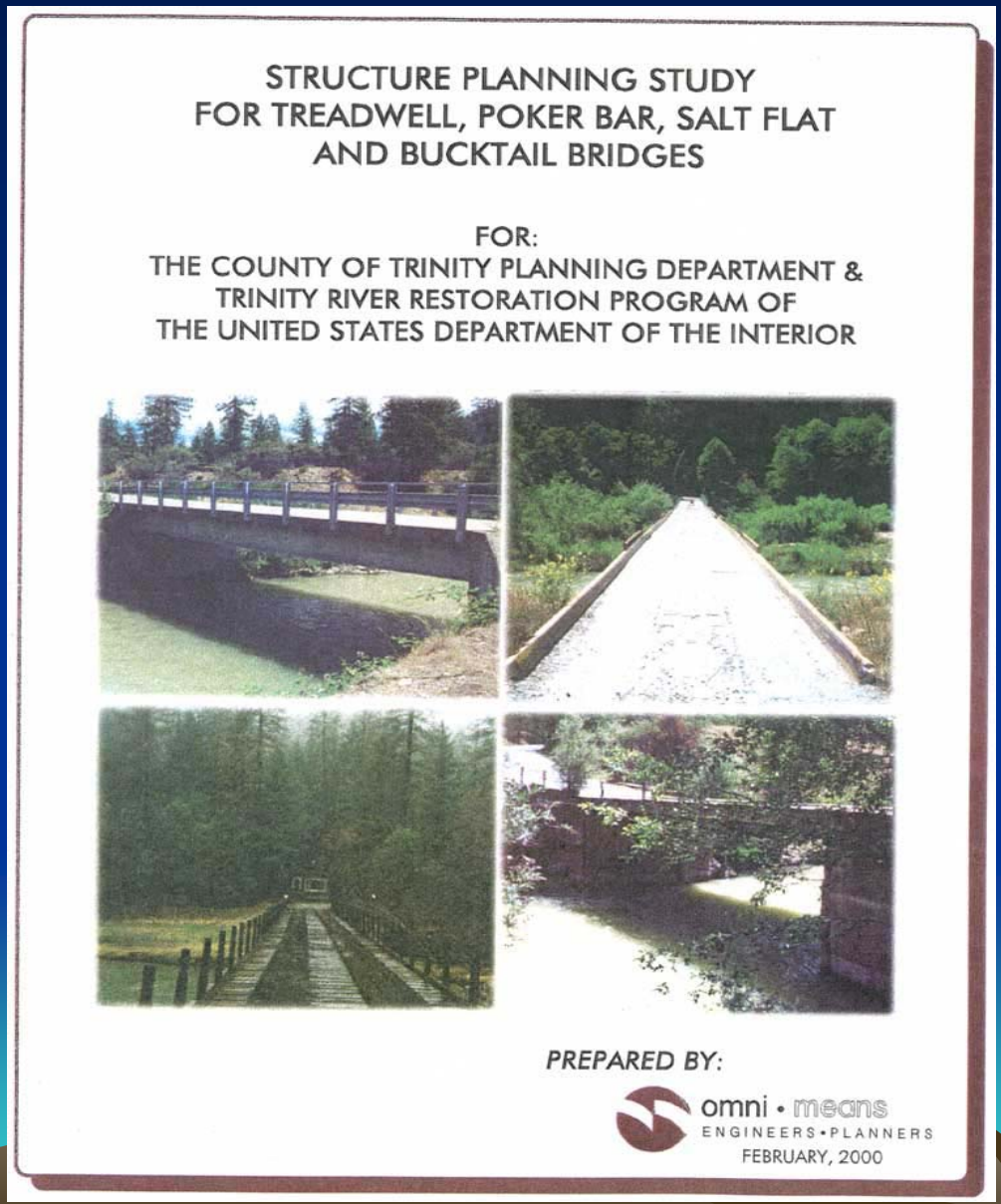


FIGURE 1. TRINITY RIVER GAGING STATIONS & BRIDGES
FROM THE INDIAN CREEK CONFLUENCE TO LEWISTON DAM (RM 94 TO 112)
4/22/02

Structure Planning Study



- 3 private and 1 county bridges affected
- Costs of replacement structures built to Federal Highways, AASHTO, and Caltrans standards would exceed $6M.

Bridge Study Goals

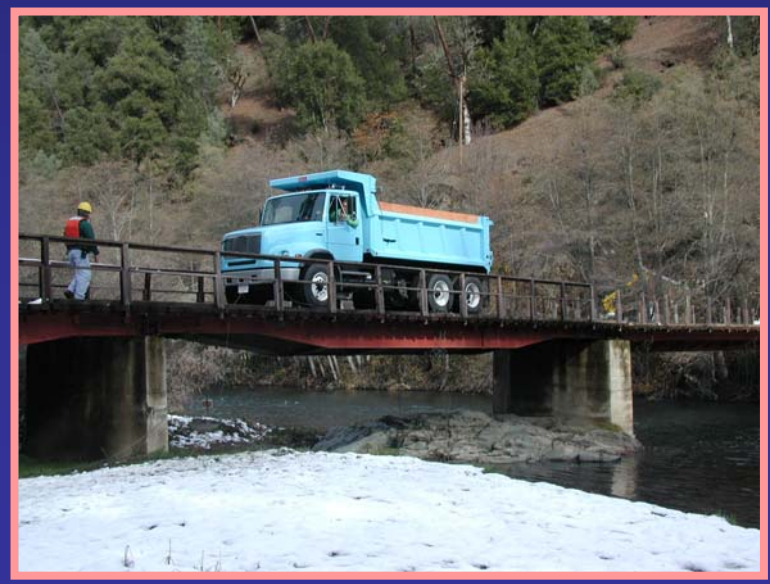
- Evaluate how proposed ROD flows affect each bridge.
  - Subsurface Investigation
  - Scour Studies
  - Load Testing
  - Hydrology Studies
  - Hydraulic Models

Exploratory Drilling

SUBSTRATE SAMPLING


Sediment Sampling

LOAD TESTING



HYDROLOGY STUDY

- IDENTIFY DISCHARGE FROM LEWISTON
  1) 11,000 FT^3/S RECORD OF DECISION FLOWS (MAY/JUNE)
  2) 50 AND 100 YEAR PROBABILISTIC FLOOD FLOWS
  3) 13,750 FT^3/S MAX CONTROLLABLE RELEASE FROM DAM
- DETERMINE 50/100 YEAR FLOW FROM TRIBUTARIES
- COMBINE LEWISTON DAM RELEASES AND TRIBUTARY INFLOWS AT BRIDGE LOCATIONS

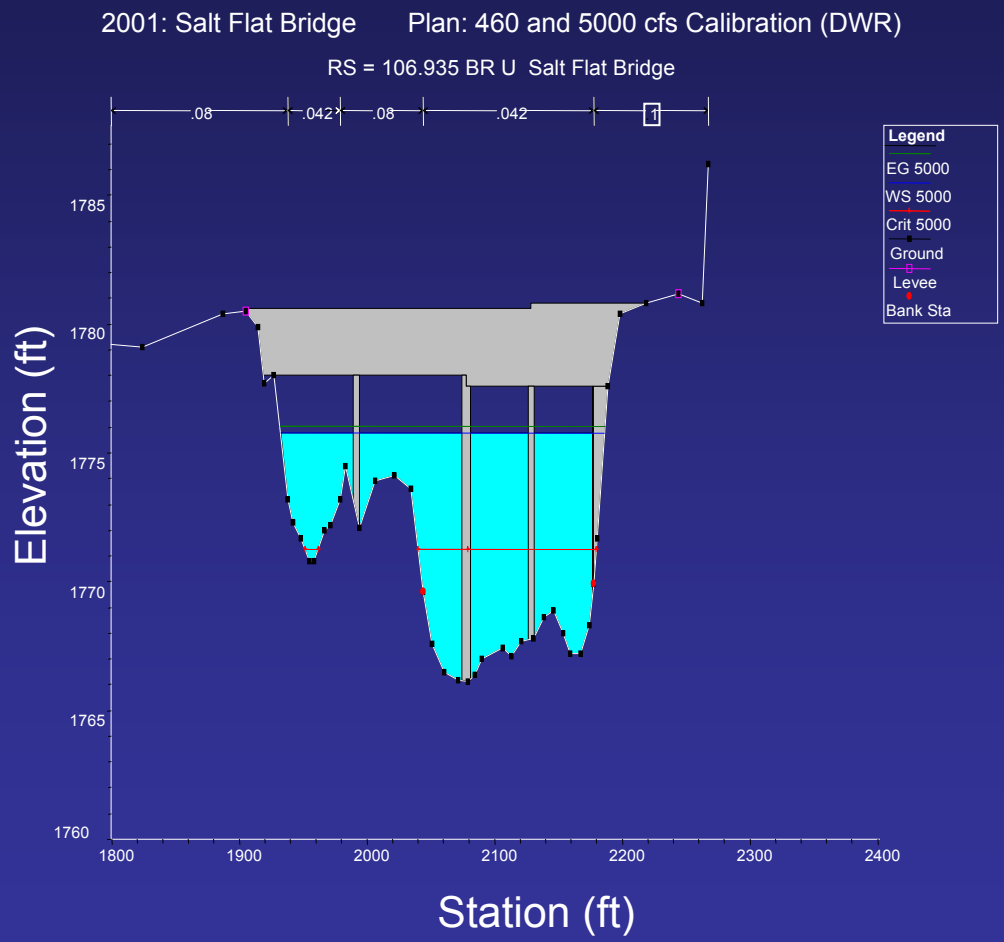
Dam Discharge Plus Tributaries

Flow Description	Flow Event	Salt Flat (cfs)	Bucktail (cfs)	Poker Bar (cfs)	Biggers Road (cfs)
Maximum Unobstructed Flow	Q_{MAX}	7,500	7,800 *	11,750	9,000
Return Period Peak Flow (Annual with ROD)	Q_{50}	11,700	11,700	18,500	19,100
	Q_{100}	12,900	13,100	23,400	24,700
Maximum Controlled-Flow Release	Q_{MCR}	14,900	15,000	17,000	17,200
Estimated Flow During 1/1/97 Event	Q_{1997}	11,000	11,000	15,000	15,000
Typical Maximum Flow – July 22 to October 15	Q	450	450	450	450

* Flow at inundation of access road

HOW FLOWS ARE USED IN BRIDGE DESIGN

FLOWS ARE ENTERED INTO A COMPUTER MODEL THAT CONTAIN REPRESENTATIVE CROSS-SECTIONS OF THE AREA OF INTEREST. FROM THIS MODEL, WATER ELEVATIONS BASED ON FLOW RATES ARE DETERMINED



Flow and Water Surface Elevation

Flow Description	Flow Event	Salt Flat (cfs) Low Chord = 1777.6 Top of Deck = 1780.6	Water Surface Elevation (ft)
Maximum Unobstructed Flow	Q_{MAX}	7,750	1777.6
Return Period Peak Flow (Annual with ROD)	Q_{50}	11,700	1780.0
	Q_{100}	12,900	1780.4
Maximum Controlled-Flow Release	Q_{MCR}	14,900	1781.0
Estimated Flow During 1/1/97 Event	Q_{1997}	11,000	1779.5
Typical Maximum Flow – July 22 to October 15	Q	450	1770.1

BRIDGE STUDY GOALS

- Evaluate how proposed ROD flows affect each bridge
- Identify concepts to address weaknesses in the ability of the bridge to pass the ROD flows

Alternatives to Address the ROD Releases

- Monitor and Maintain
- Retrofit the existing bridge
- Eliminate existing bridge and develop new access from other side
- Construct a new bridge upstream
- Construct a new bridge downstream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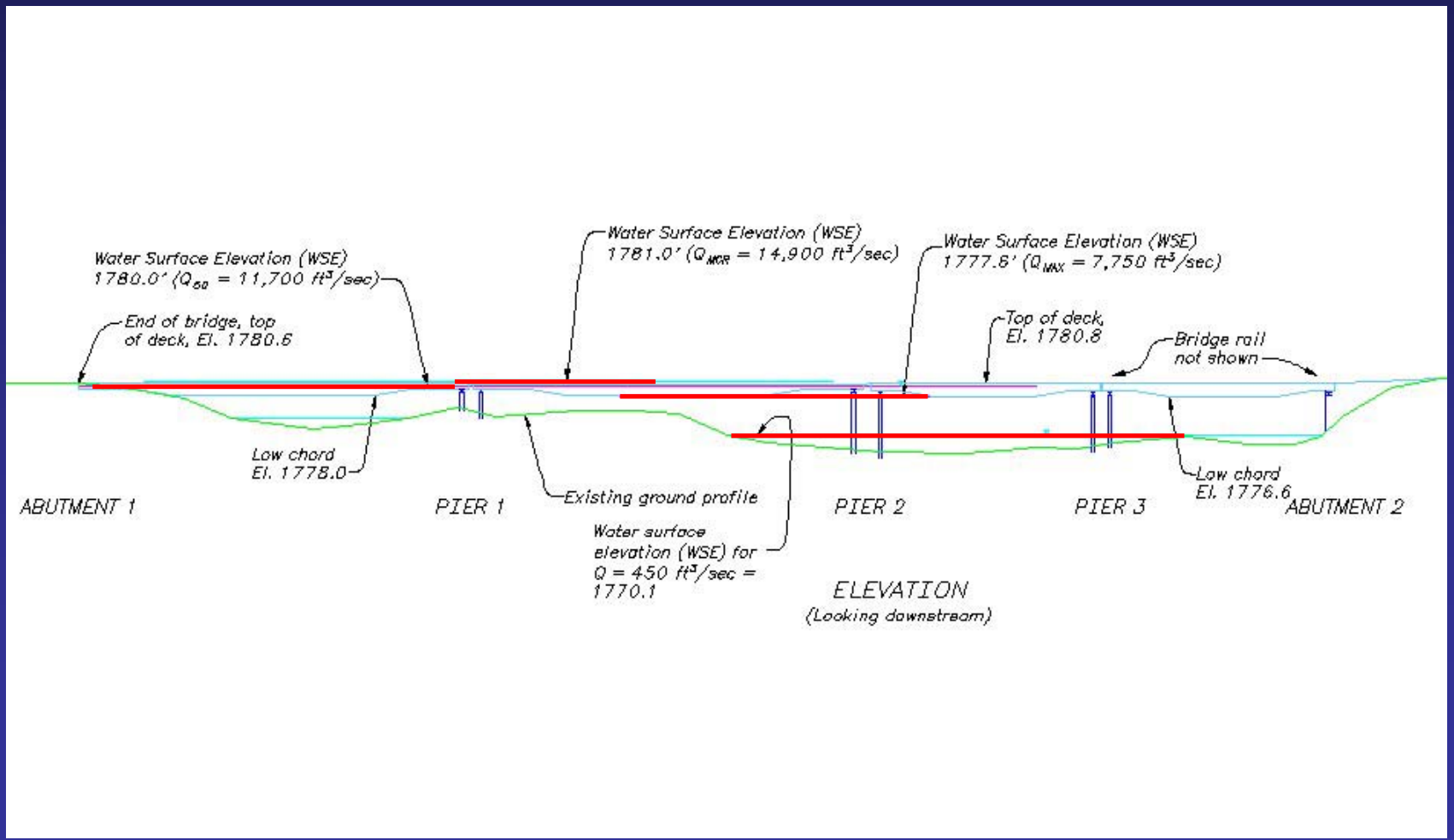
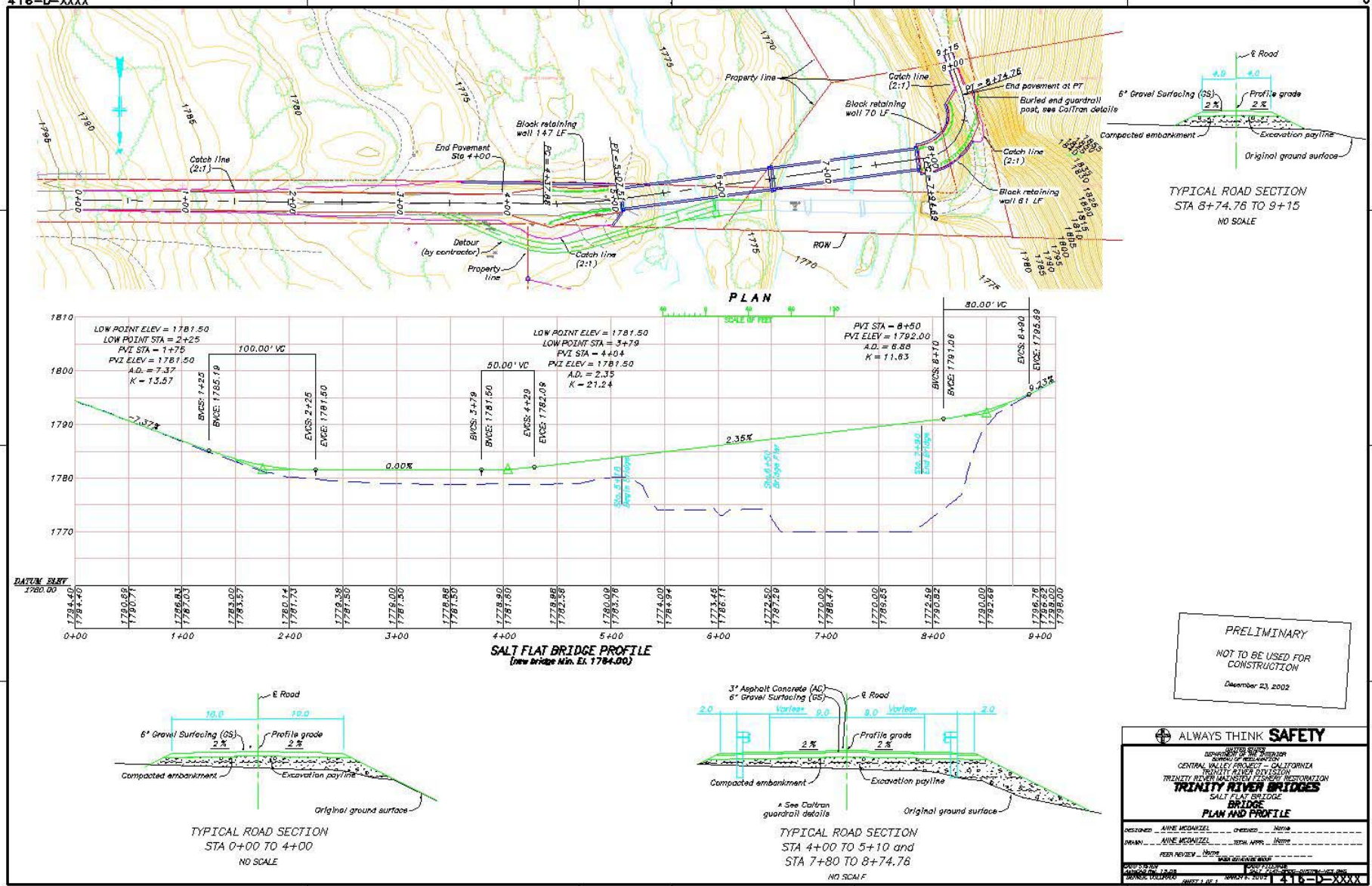
Sally J Arnold & Robert Whalley
Henry G. Heinsohn
Roy L. Arnold
Richards Stephen F. & Milo
Jack D. Polk
Francis C. Taylor

Existing Bridge Profile

Q_{50} = 11,700 cfs, Q_{MCR} = 14,900 cfs, Q_{MAX} = 7,750 cfs

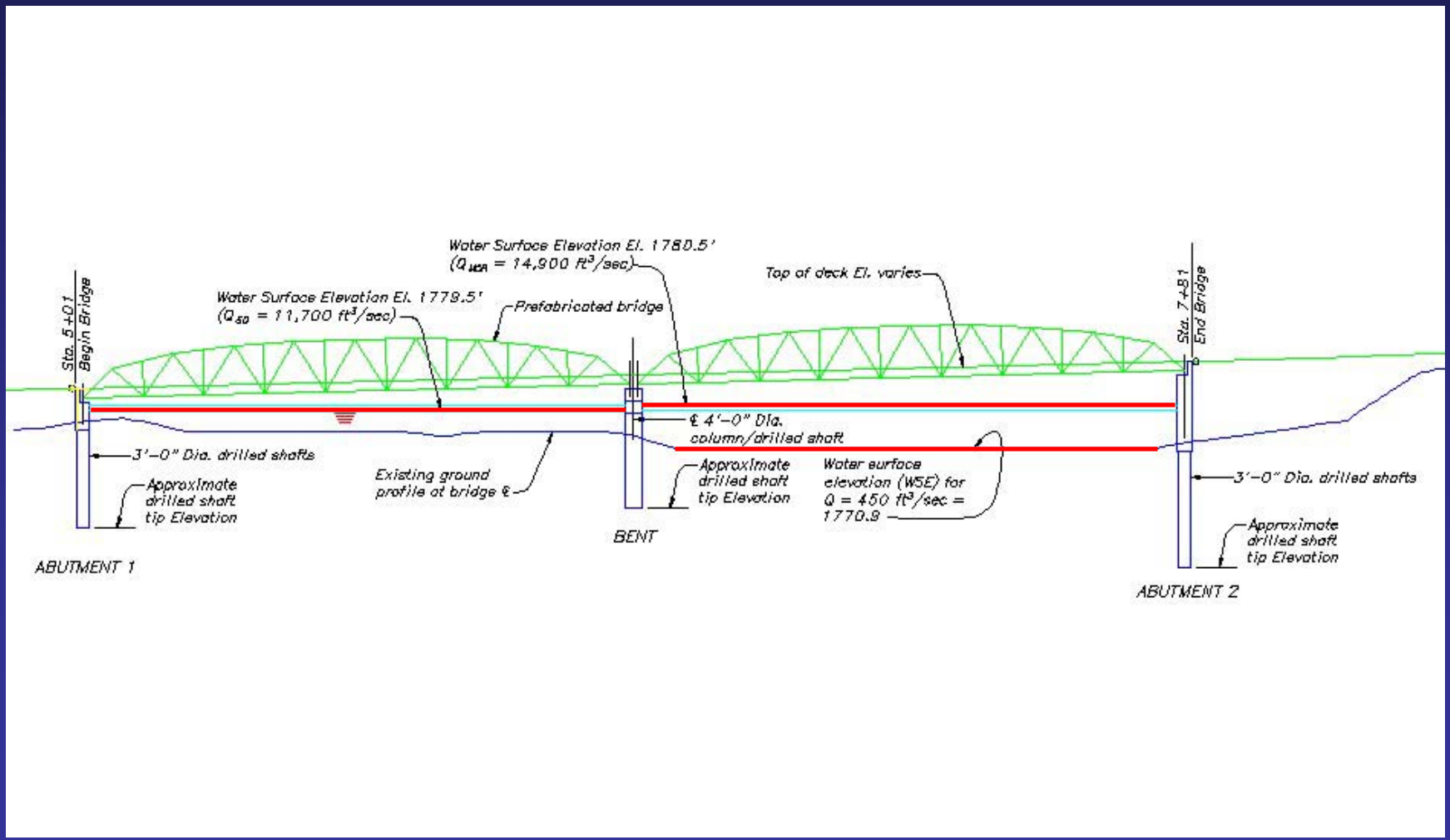


Salt Flat Proposed Action



Proposed Action Profile

Q_{50} = 11,700 cfs, Q_{MCR} = 14,900 cfs




Salt Flat Bridge
Proposed Action: Downstream Bridge

Horse Creek Bridge, Klamath National Forest, FHWA

- Weathering steel, maintenance free
- Low superstructure depth, for long spans
- Blends well with the environment

Cost

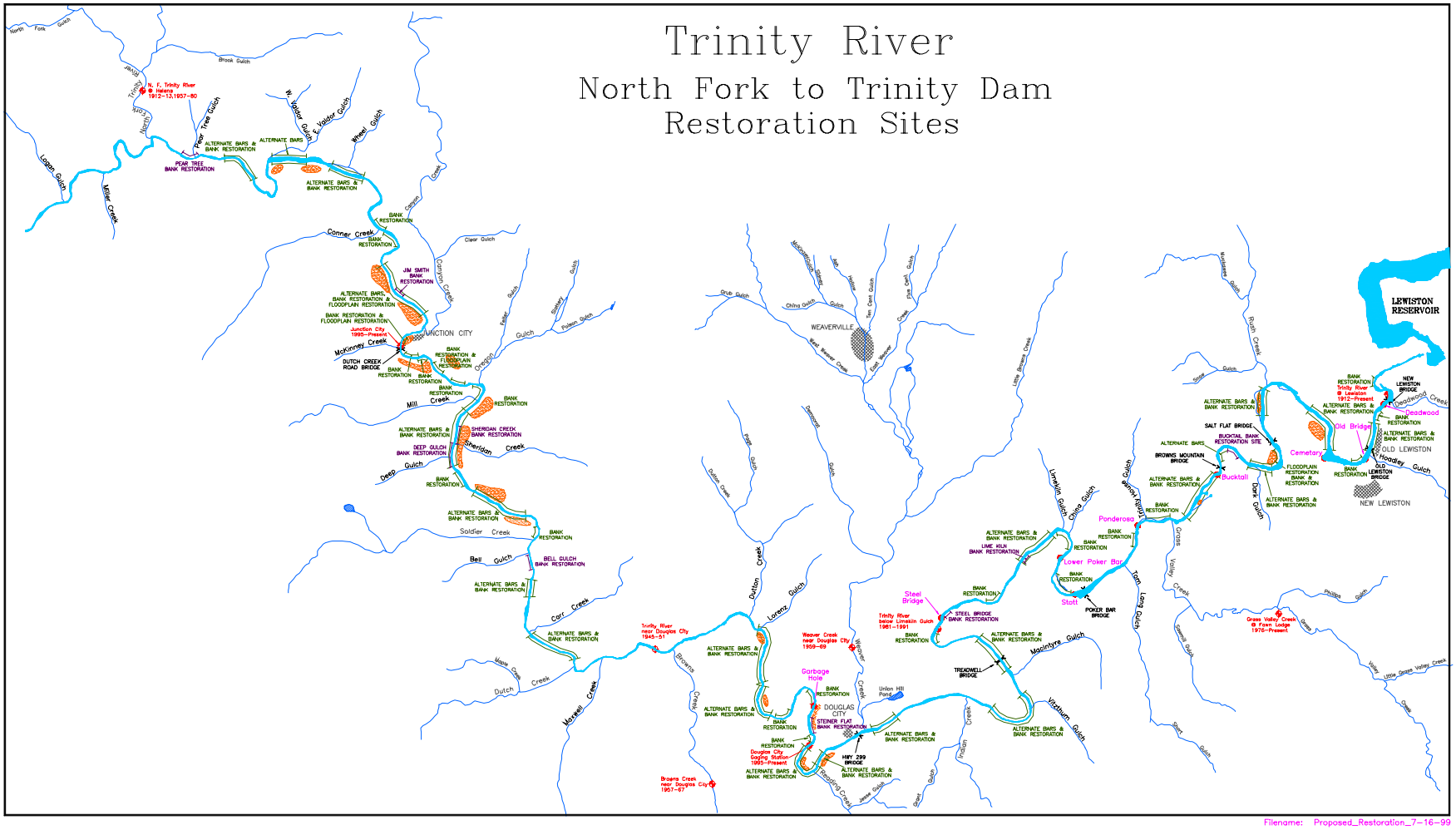
Construction Contract	$ 2,095,000
Design	$ 245,000
Construction Management	$ 146,000
Geology and Contracting	$ 45,000
Total	$ 2,531,000

Funding through Reclamation ($ 1,600,000) and Trinity County ($ 931,000)

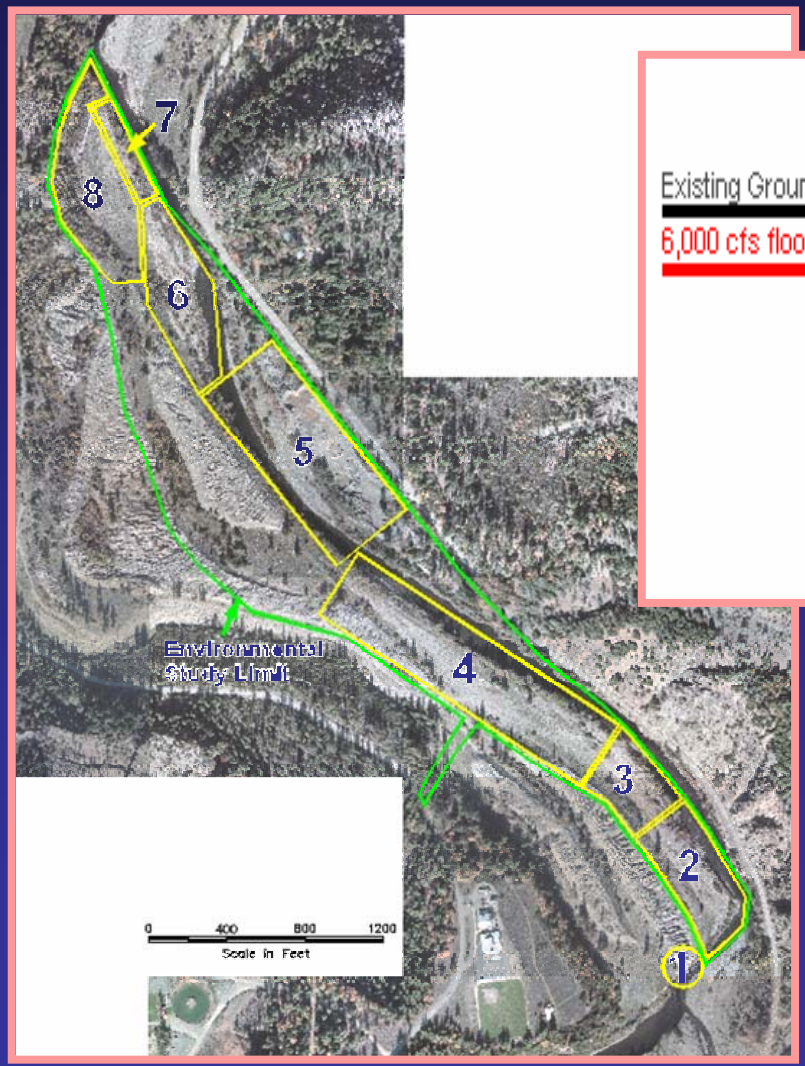
Schedule

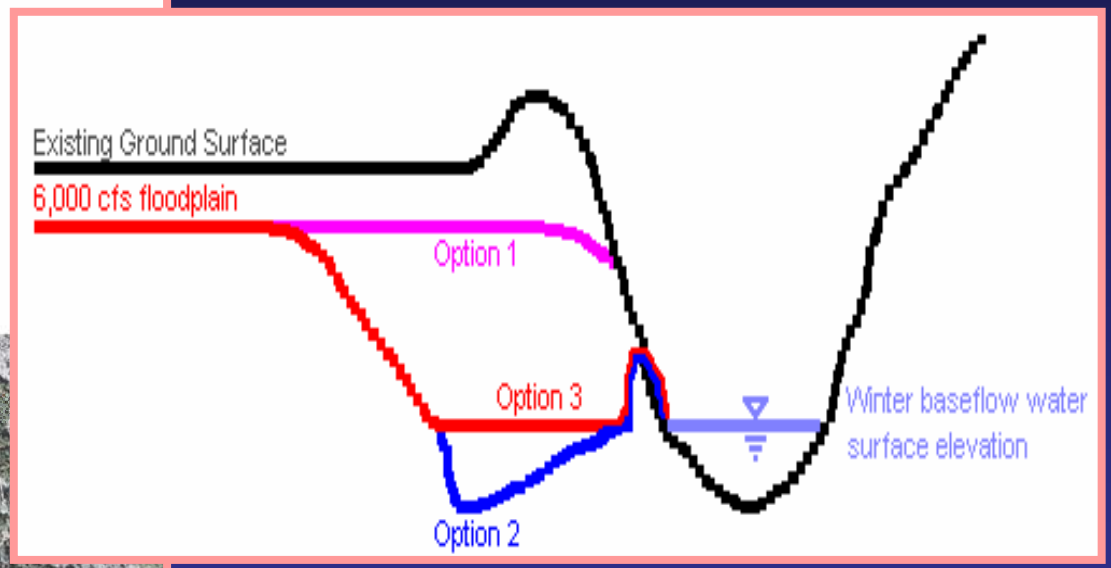
- Draft Environmental Document
  - April 2003
- Final Environmental Documents, Permits
  - June 2003
- Construction Contract Award (Salt Flat, Biggers Road)
  - July 2003
- New Bridge Open to Traffic
  - February 2004

Restoration Sites



Hocker Flat Bank Rehabilitation Project



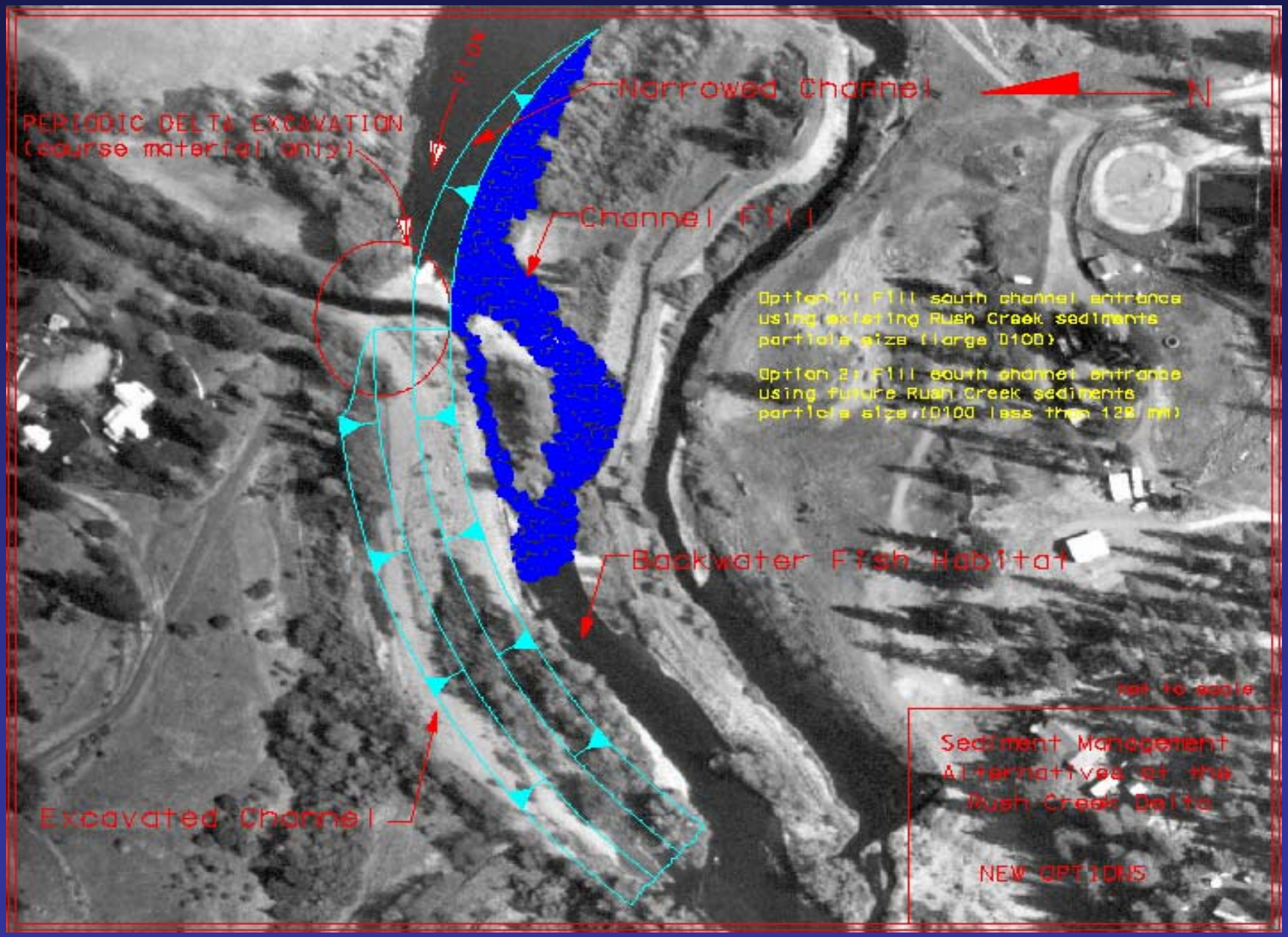


Hocker Flat Schedule

- Draft Environmental Document
  - May 2003
- Final Environmental Documents, Permits
  - July 2003
- Construction Contract Award
  - September 2003
- Construction Complete
  - October 2004


Rush Creek Delta

Rush Creek Delta Design



Coarse Sediment Supplementation

- Short-Term and Long-Term
- Up to 67,000 yd^3 in Extremely Wet Years
- Currently Developing Gravel Management Plan

Spawning gravel adjacent to Trinity River Fish Hatchery

Gravel supplementation during high flows

Mercury Concerns

- Exposure during channel excavations (bridge foundations, delta removal)
- Wasting of riparian berm sediments
- Reuse of excavated channel materials
- Processing or mobilization of tailings
- Safety during construction

TAMWG Participation

- Anytime anywhere based on schedules, the earlier the better.
- The bridges and Hocker Flat are well along, with identified proposed actions
- Rush Creek and hatchery gravel projects are just beginning
- Involvement through individuals or tech teams